

Mr. Carpenter was a ready writer, and contributed numerous articles on a variety of subjects, mainly scientific, to the current periodicals of the time ; his expositions of phenomena were couched in a style that was not only in itself attractive, but also conveyed to the reader such accurate information as would enable him clearly to understand the various matters treated. He had also a very practical turn of mind, was a good mechanic, had artistic tastes and musical ability, and was moreover an excellent photographer, and in the later years of his life he gave great assistance, in conjunction with Dr. Moore, in the installation and practical application of the Röntgen ray method to surgical purposes at the Miller Hospital, Greenwich, of which Institution he was a Member of Committee.

W. E.

SAMUEL COOKE was born 1844 May 22. He was educated at Trinity College, Dublin ; and, having completed the course in the School of Engineering, he took his degree in 1868, receiving two special certificates in Mechanical and Physical Science, and in Chemistry, Geology, and Mining. Immediately after taking his degree, he was appointed to be Professor of Chemistry and Geology in the Civil Engineering College at Poona, University of Bombay. His father, Mr. Theodore Cooke, was at the time Principal of the College ; and on his retirement in 1893, after holding the office of Principal for twenty-eight years, the son, Mr. Samuel Cooke, was appointed Principal of the College of Science, as it was then called, in his stead. Mr. Cooke was the author of several text-books, which have run through many editions ; amongst others may be mentioned his *First Principles of Chemistry* (six editions), *Students' Practical Chemistry* (three editions), *First Principles of Astronomy* (five editions), *The Foundations of Scientific Agriculture*, published in 1897.

He was elected a Fellow of this Society in 1898 February 11.

NATHANIEL EVERETT GREEN was born at Bristol 1823 August 21. He was the third son of Benjamin Holder Green, of that city, and bore his mother's maiden name. She was Elizabeth Everett, of Crokerton, Wilts. He was educated chiefly by his uncle, the Rev. C. Everett, and in 1840 started life in a merchant's office in Liverpool. Finding a commercial life uncongenial to him, and having a great taste for drawing, he decided to adopt art as his profession, and came to London in 1844, entering the Royal Academy as a student in December of that year. Here he worked side by side with Leighton, Millais, and Rossetti. In 1847 he married Elizabeth Goold, of Cork, and after living for about a year in the west of London he eventually settled in St. John's Wood, where he resided for forty-nine years, attracted to the neighbourhood by its quiet retirement and its favourable surroundings for the pursuit of his artistic and astronomical studies. He frequently exhibited his work, both in oil and water colours, at the Royal Academy and other galleries, but the

pressing needs of a large and growing family—he had five daughters and four sons—led him to adopt teaching as a profession. In this he was eminently successful, and gained a wide-spread reputation. In 1880 he was called to Balmoral, and had the honour of numbering amongst his pupils Her Majesty the Queen, the Princess of Wales, and Princess Beatrice. He was the author of many works on art, principally manuals and other works of a practical kind, which have had a wide circulation.

In 1884 he visited Palestine, and there some of his best water-colour drawings were made. A succession of dreary winters in London drove him in 1890 to seek summer skies for his artistic work, and for this cause, as well as for the benefit of his wife's health, he selected Cannes as his winter home. During the six seasons spent there he formed a wide circle of friends, and he continued his work there till his last visit in 1898–99.

His interest in astronomy dates back to 1859, when he constructed a telescope for himself, and began the long series of observations and drawings which he continued to make till within a year and a half of his death. His most numerous drawings were made in the two observatories in his garden in Circus Road, St. John's Wood. He frequently changed his instruments, always striving to get greater perfection, and in his Memoir on Jupiter (*Memoirs R.A.S.*, vol. xlix.) he speaks of having used five different instruments in his observations during the years 1859–87—namely, successively “a 4-inch and a 5-inch refractor, and reflectors of 9, 13 and 18 inches, the last a superb mirror figured by George With, of Hereford.” In 1877, on the occasion of the favourable opposition of *Mars*, Mr. Green went to Madeira, and during August and September he made the series of admirable drawings of the planet with which his name will always be associated. Of the forty one sketches made with a 13-inch With reflector, twelve were reproduced in his Memoir (*Memoirs R.A.S.*, vol. xliv.), as well as enlarged drawings of the south polar cap and a map of the planet. Of these drawings Professor Keeler has said in his Memoir (*Memoirs R.A.S.*, vol. li.): “The admirable drawings of Mr. Green owe much of their value to the care which has been bestowed on the appearance of the different features, and their general agreement with views of *Mars* in both large and small telescopes is doubtless due to the same reason. It seems to me that the habit of representing indefinite boundaries by sharp lines and neglect to preserve a uniform scale of relative intensity are responsible for most of the discrepancies in drawings which are ascribed to personality of the observer in interpreting faint markings.” It is interesting to note that Mr. Green's observations were made with a 13-inch reflector, and Professor Keeler's with the 13-inch refractor of the Allegheny observatory.

At the less favourable opposition of *Mars* in 1886, Mr. Green made further studies of the planet, and made a map of the northern hemisphere. These were not published, but several of

the sketches and a map of the planet constructed from them are in the rooms of the Society.

In the *Monthly Notices* of the Society six short papers by Mr. Green are published relating to observations of *Mars* and *Saturn*. And the *Memoirs* of the Society contain two papers by him; the first in vol. xliv., already referred to as containing the results of his observations of *Mars* in 1877; the other, in vol. xlix., giving the results of a series of observations of *Jupiter* during the years 1859–87, and illustrated by a series of beautiful drawings.

In the *Journal* of the Selenographical Society Mr. Green has given proof of his active membership in a long series of papers on Lunar formations, accompanied by drawings.

Mr. Green was a member of the Provisional Committee of the British Astronomical Association, and was President of the Association in 1897–98. In 1896 he joined the Eclipse expedition to Norway, and it is much to be regretted that he had not the opportunity of using his skill in the delineation of the corona. He was a type of the best kind of amateur observer. Possessing great skill in drawing, he devoted himself to observations in which his keen sight and true hand enabled him to secure results of permanent value. He was always ready to put his experience at the disposal of other observers, a fact which is exemplified both in the character of his notes, already referred to, in the *Monthly Notices* and in the admirable practical lecture on astronomical drawing published in the third volume of the *Journal of the British Astronomical Association*.

For a period of nearly forty years he continued his astronomical work with unflagging perseverance. His profession often claimed him the whole day long, and after a light meal he would begin work with the telescope, often prolonging his study far into the night. On unfavourable evenings he would devote himself with equal assiduity to work with the microscope.

Besides his published drawings, Mr. Green left behind him a great number of sketches of detail on the Moon, of *Saturn* and of *Mars*, and a long series of drawings of *Jupiter*.

He was elected a Fellow of the Society 1875 February 12. He died after a very short illness, 1899 November 10, at the age of seventy-six, leaving a widow.

[For most of the particulars in this notice the Council is indebted to his daughter, Miss Green.]

JOHN MARSHALL was born at Leeds 1825 April 11, and was the son of Thomas Marshall. He got a training in lithography, and was for some years the manager of one of the large printing works in Leeds. Whilst he was engaged in lithography he drew upon stone facsimiles of many letters of eminent writers, and they were printed on a large sheet. A bronze medal was awarded to him for this holograph sheet at the Leeds Exhibition of 1858. For twenty-two years Mr. Marshall was Secre-